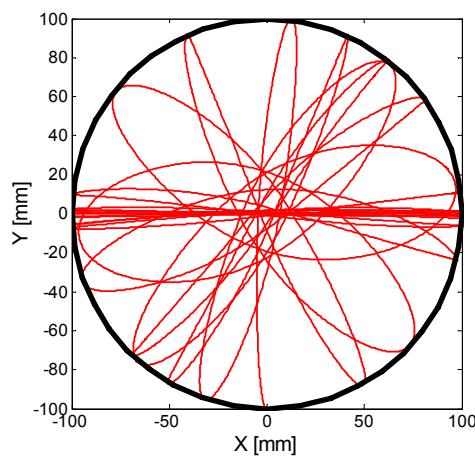
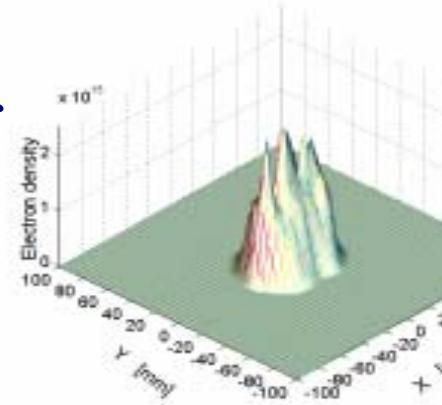


# Flat beam effect on EC distribution

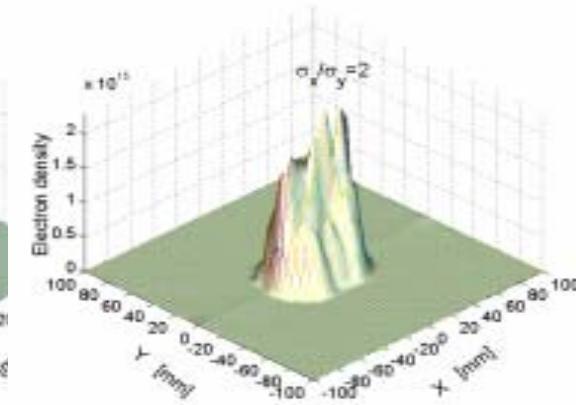
- Flat beam  $\sigma_x : \sigma_y = 2:1$
- Stronger multipacting in larger beam size direction due to the polarization effect of strong beam space charge force
- Qualitatively agrees with LANL PSR observation



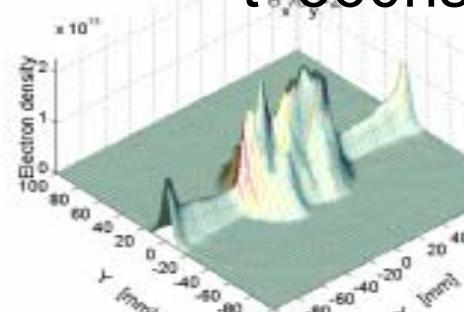
t=350ns



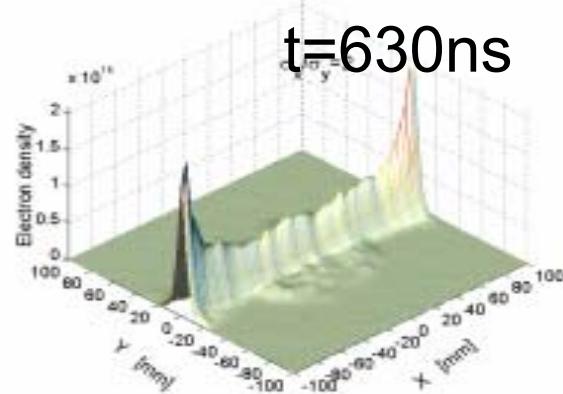
t=490ns



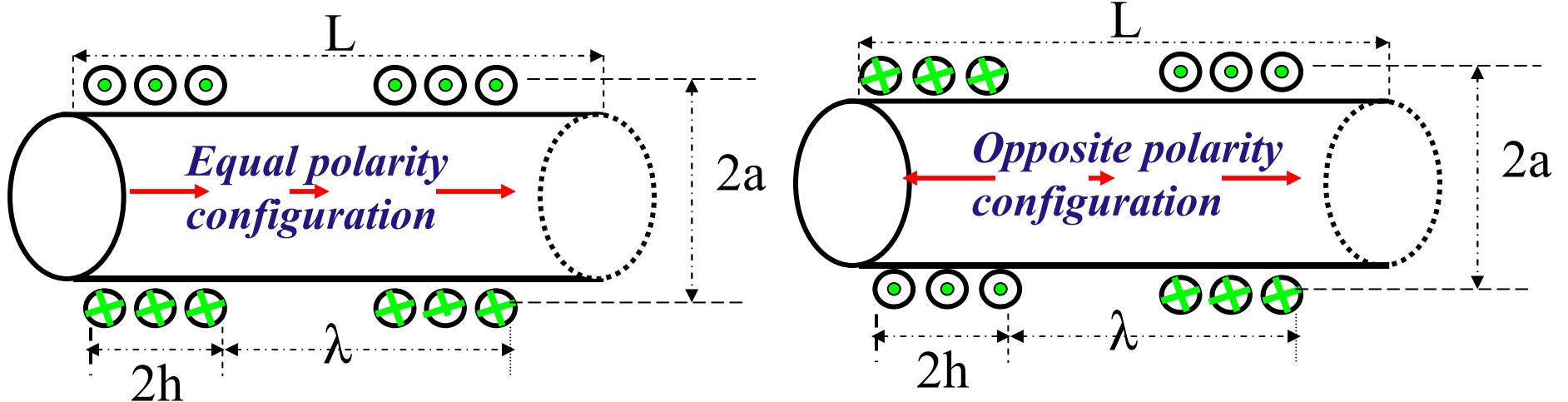
t=560ns



t=630ns



# Solenoid--Configuration



$$B_r = B_0 \frac{2ka}{\pi} \sum_{n=1}^{\infty} \sin nhk K_1(nka) I_1(nkr) \sin nkz$$

$$B_z = B_0 \left( \frac{2h}{\lambda} + \frac{2ka}{\pi} \sum_{n=1}^{\infty} \sin nhk K_1(nka) I_0(nkr) \cos nkz \right)$$

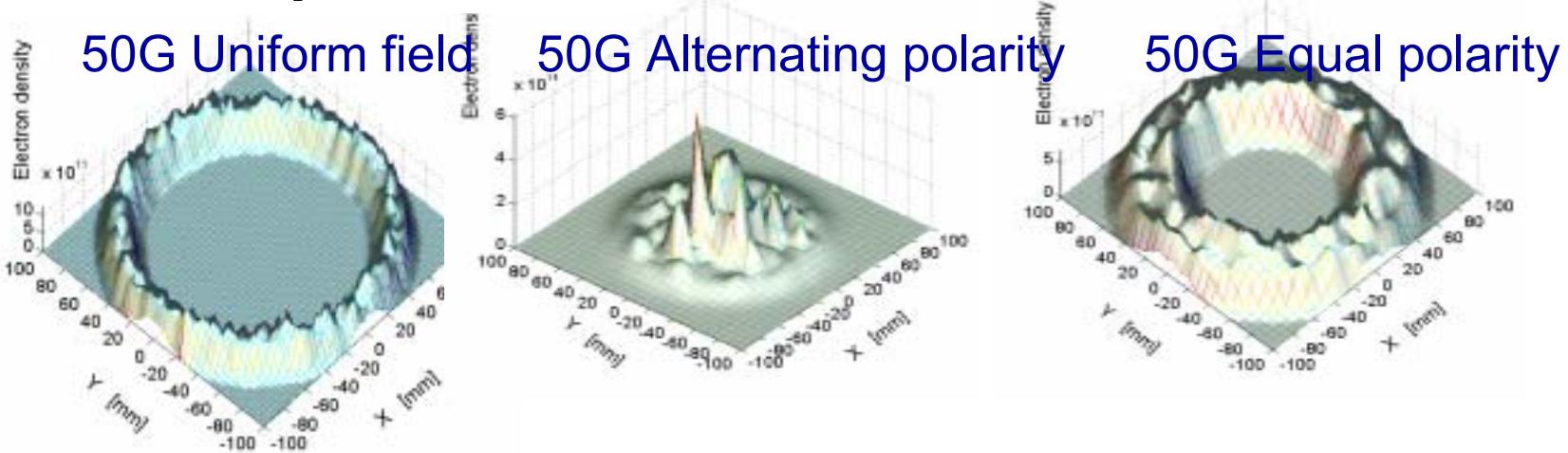
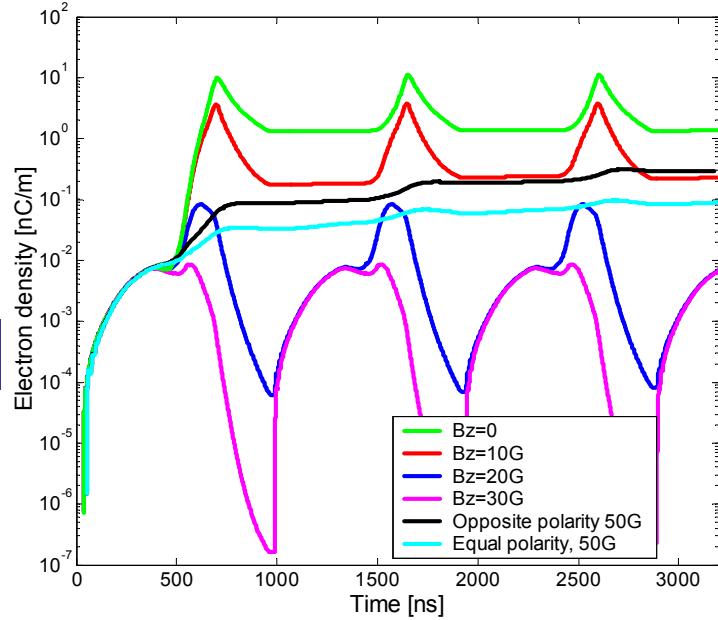
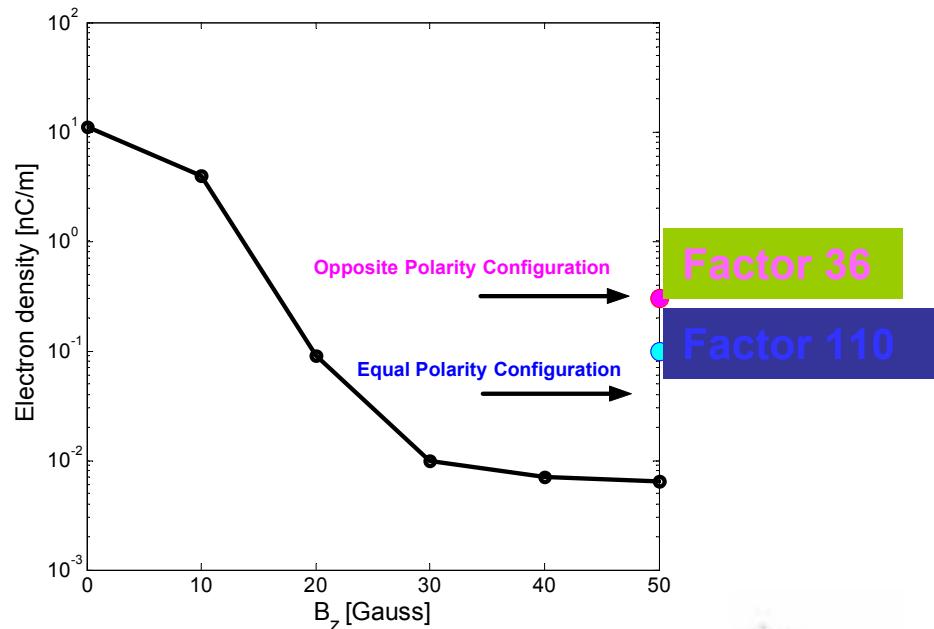
$$B_r = B_0 \frac{4ka}{\pi} \sum_{n=1,3,5}^{\infty} \sin nhk K_1(nka) I_1(nkr) \sin nkz$$

$$B_z = B_0 \frac{4ka}{\pi} \sum_{n=1,3,5}^{\infty} \sin nhk K_1(nka) I_0(nkr) \cos nkz$$

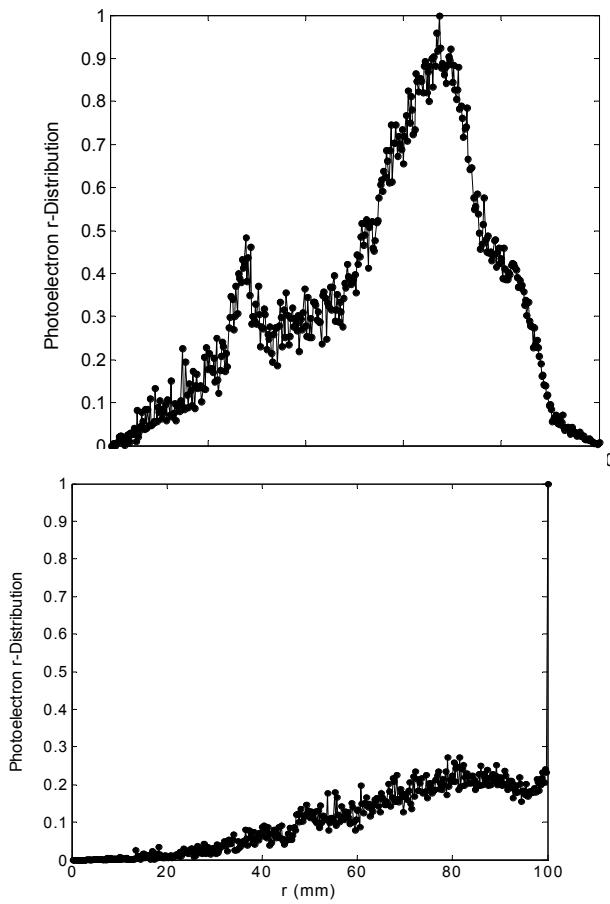
*By E. Perevedentsev*

$B_0 = 50$  Gauss,  $h = 0.4$  m,  $a = 120$  mm,  $\lambda = 1$  m and  $2$  m

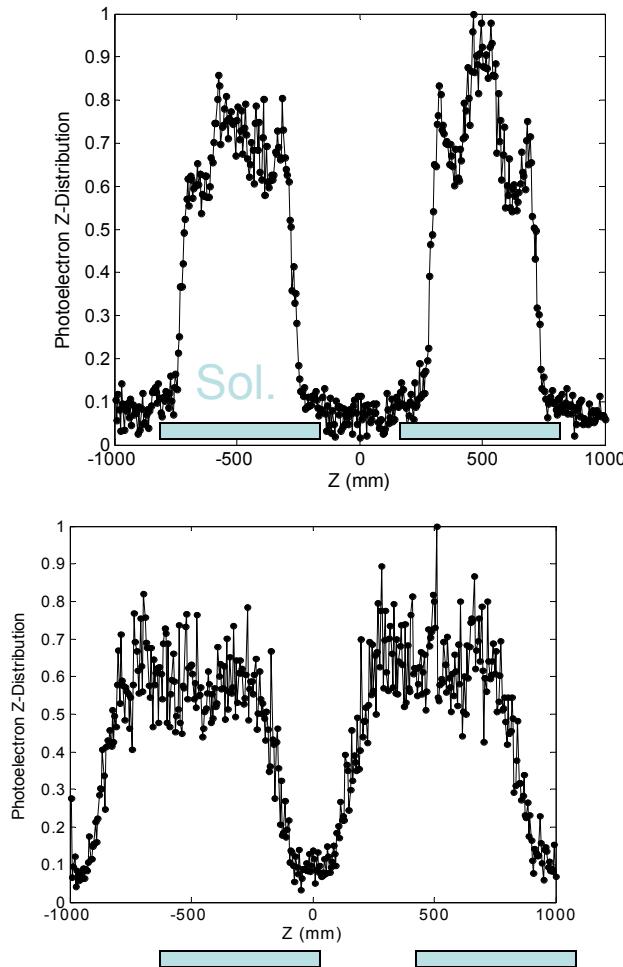
# Solenoid configuration effects



# Eccloud distribution with opposite polarity configuration



Radial distribution



Longitudinal distribution